REMARKS

The Office Action mailed March 18, 2003 has been carefully considered. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested.

Amendments to the Specification

The paragraph at page 2 has been updated with the patent number of the application referenced there. Paragraphs at pages 15, 26-27 and 28 have been amended to correct informalities. At page 15, a reference numeral that was used twice for different elements in Figure 9 has been corrected. At pages 26-27 and 28, grammatical informalities have been corrected. None of these amendments add new matter.

The Claims

Claims 1 – 32, including independent claims 1 and 17, are pending in this application prior to entry of this Amendment. After entry of this amendment, claims 1 – 7, 9 – 12, 16 – 23, 25 – 28, and 32 – 36 are pending in this application, including independent claims 1, 17 and 33.

Claims 8, 13-15, 24, and 29 – 31 have been canceled. Claims 1, 2, 4 – 7, 17 – 23 and 25 have been amended. Support for the amendments in claims 1 and 17 may be found in the specification in, for example, Figures 10, 12 and 14 and at page 6, lines 6 – 10, and at page 23. Claims 4 – 7 have been amended to make the language in these claims consistent with the amendments made to claim 1. Claims 20 – 23 have been amended to make the language in these claims consistent with the amendments made to claim 17. Claims 2, 18 and 25 have been amended to correct language informalities.

Claims 33 – 36 have been added, of which claim 33 is independent. Support for these newly added claims is found in the Specification in Figures 9, 11 - 13 and 15 - 19, and in the description of those figures at pages 13 – 19, 21 – 24 and 26 - 28. Support for the limitation referencing a data store is found in the

Specification in the discussion accompanying Figure 6 at page 10 in conjunction with Figure 9 at pages 13-19.

35 USC § 103

In the Office Action, Claims 1-3, 9-12, 16-19, 25-28 and 32 were rejected, in paragraph 3, under 35 U.S.C. § 103(a) as being unpatentable over Nukui et al (US 5,945,661) (hereinafter referred to as Nukui) in view of Wang (US 5,304,787) (hereinafter referred to as Wang '787) and Chandler (US 5,241,166).

Claims 1-3, 9-12, 16-19, 25-28 and 32

The rejection of claims 1-3, 9-12, 16-19, 25-28 and 32 under 35 U.S.C. § 103(a) is respectfully traversed, and reconsideration of this rejection is respectfully requested in view of the following remarks. In brief, it is respectfully submitted that a prima facie case of obviousness has not been made with respect to the rejection of claims 1 and 17 as now amended because the cited references do not teach all of the requisite claim limitations of claims 1 and 17. Specifically, independent amended claims 1 and 17 require that the substrate of the apparatus and method, respectively, include a visible object and coded embedded data indicating information about the visible object, the coded embedded data forming a uniform background for the visible object.

Nukui teaches a data symbol reading device for reading a data symbol, preferably a two-dimensional data symbol, and evaluating whether the entire data symbol is within the symbol reading area of the device. The data symbols evaluated by the reader taught by Nukui are visible symbols (see col. 1, lines 17 – 20; col. 7, lines 11 – 16), where the coded data is carried by a mosaic or tessellated pattern (col. 1, lines 17 – 20, and Figure 4). This is further substantiated by the fact that the operation of the evaluating element of the invention is based on finding a complete outline in black pixels of the data symbol (see description of outline extraction process at cols. 7 – 8.) Nukui does not teach a data symbol reader or reading method that operates on a substrate that includes

a visible object and coded embedded data indicating information about the visible object, the coded embedded data forming a uniform background for the visible object, as required by amended claims 1 and 17.

The Wang '787 reference teaches image processing methods for locating visible 2D bar codes in an image that has already been captured (col. 2, lines 8 – 16), and does not specifically teach an image capture apparatus or method. The 2D bar codes illustrated and described in Wang '787 are visible coded data printed on a piece of paper or elsewhere. See Figures 1, 3a and 3b and col. 3, lines 33 – 36.

The Chandler reference teaches a label and process for encoding information in an optical scanning system in a multiplicity of cells, and for decoding that information. The multiplicity of cells is arranged in a regular pattern called an acquisition target wherein each cell in the pattern may have one of two different optical properties, typically black and white. Col. 5, lines 15 – 29 and col. 6, lines 13 – 23. Black and white information-encoded cells are arranged in a multi-resolution information array, wherein low resolution scanning can be performed to acquire (e.g., identify) the target and high resolution scanning can be performed to acquire the encoded information, as illustrated in Figures 3a and 3b, and discussed at cols. 6 - 8. Thus, the coded information illustrated and described in Chandler is visible coded data in the form of the acquisition target. While some of the encoded data in the white high resolution encoded cells may not be visible to a person looking at the acquisition target, the target itself, made up of at least two different optical properties, is visible. Col. 8, lines 11 – 33.

Thus, neither the Wang '787 nor the Chandler reference alone, or in combination with Nukui, teach a data symbol reader or reading method that operates on a substrate that includes a visible object and coded embedded data indicating information about the visible object, the coded embedded data forming a uniform background for the visible object, as required by amended claims 1 and 17.

Claims 1-3, 9-12, 16-19, 25-28 and 32 are believed to be in condition for allowance.

For the foregoing reasons, is believed that independent claims 1 and 17 are patentably distinct over and are not obvious in view of the Nukui, Wang '787 and Chandler disclosures, and are believed to be in condition for allowance. Insofar as claims 2-3, 9-12, 16, 18-19, 25 -28 and 32 are concerned, these claims all include the limitations of and depend from now presumably allowable claims 1 and 17, and therefore, are also in condition for allowance.

Claims 4-7 and 20-23

In the Office Action, Claims 4-8, 13-15, 20-24, and 29-31 were rejected, in paragraph 4, under 35 U.S.C. § 103(a) as being unpatentable over Nukui / Wang '787 / Chandler as applied to claims 1 and 17 above, and further in view of Wang et al (US 5,513,264) (hereinafter referred to as Wang '264). In view of the cancellation of claims 8, 13 – 15, 24 and 29 – 31 in this amendment, this discussion will refer to remaining claims 4 – 7 and 20 – 23.

The Wang '264 reference discloses a hand-held visually interactive decoding system for decoding dataforms that includes a code scanner portion, a display 34a and a decoding unit, as illustrated in Figures 3a and 3b, and as described at col. 5. A dataform is defined as all arrangements whereby data in some form adapted to be machine readable is fixed in a copy. Col 1, lines 28 – 30. Display 34a first presents a visual representation of the dataform; a user of the device may make manual adjustments to the alignment, position, focus and distance or size of the dataform based on the display, prior to scanning and decoding, by physically moving the handheld decoding system relative to the dataform so that the dataform reading performance characteristics are optimized. Figures 3a and 3b and Col. 5, lines 1 – 3 and 13 – 33. The decoding system disclosed in the Wang '264 reference provides for cases where the dataform is recorded in a form not resulting in a viewable graphic image (such as being recorded in invisible ink), noting that in those cases, "any appropriate visual

representation may be displayed in order to enable the operator to identify the target dataform area and to make appropriate reading relationship adjustments... ." Col. 8, lines 32 – 39.

The Office Action states that Wang '264 teaches that "following decoding, a displayed visual representation of the decoded data may be provided (fig. 8 and col 9, lines 13 -15)" (Office Action, paragraph 4 at page 4) and goes on to rely on this display as motivation to combine Wang '264 with the combination of Nukui / Wang '787 / Chandler. It is respectfully submitted, however, that the Wang '264 disclosure is ambiguous at best as to where this display of the decoded data actually occurs, and may actually teach away from display of the decoded data on the display of the handheld decoding system. Wang '264 discloses that the information decoded from the dataform is provided to either port 38a (Figures 3a and 3b) or to data output device 40 (Figure 2, the decoder system); see col. 5, lines 34 – 46. Figures 3a and 3b include display 34a, but neither one of these is mentioned as a possible display destination for the decoded data in col. 5. Moreover, figure 8 references the output of display step 92 as going to display 94, and not specifically to display 34a of Fig. 3a or 3b of the handheld decoding system. Surely display 94 could have been labeled as display 34a if that was the display device intended. It is reasonable to conclude from this that the inventors contemplated that the decoded output would not appear on the display integrated with the handheld decoding system, but could appear on another display, or not be displayed at all but rather provided through port 38a to a separate device for further processing.

The Wang '264 reference provides for the handling of coded data not able to be represented in a viewable graphic image by allowing for the display of a visual representation of that coded data on the display of the hand-held decoder. However, this disclosure is not the same as teaching a data symbol reader or reading method that operates on a substrate that includes both a visible object and coded embedded data indicating information about the visible object, the

coded embedded data forming a uniform background for the visible object, as required by amended claims 1 and 17.

Moreover, claims 4 – 7 and 20 – 23 require that a second image based on the coded embedded data be displayed on the apparatus display. An operator of the handheld decoding system disclosed in Wang '264 may be able to see several versions of the dataform as the reading performance characteristics are adjusted (see e.g., at col 8, lines 52 – 56: "In a preferred embodiment the display is provided on a continuous basis so that any changes in alignment or distance... is presented on an instantaneous real time basis...") but each display version would be another version of the same dataform and not a "second image based on the coded embedded data" as required by claims 4 – 7 and 20 – 23.

Finally, as noted above, since Nukui does not teach the requisite limitations of claims 1 and 17, it follows that Nukui in combination with Wang '264 could not teach the requisite limitations of claims 1 and 17.

Claims 4-7 and 20-23 are believed to be in condition for allowance.

For the reasons above related to claims 1 and 17 and for the foregoing reasons, is believed that claims 4 – 7 and 20 – 23 are also patentably distinct over and are not obvious in view of the Nukui, Wang '787, Chandler and Wang '264 disclosures, and are also believed to be in condition for allowance.

Newly-added Claims 33-36

It is respectfully asserted that newly-added claims 33-36 are also patentably distinct over and are not obvious in view of the combination of Nukui, Wang '787, Chandler and Wang '264. Claim 33 is directed to a manually moveable apparatus that includes image capture means for capturing an image region of the image on a substrate; the image region including an object visible to a user and coded embedded data indicating identification information about the visible object; the coded embedded data forming a uniform background for the visible object. Claim 33 further includes a display for displaying the image region

captured by the image capture means. In addition, in claim 33 an output image is produced using second information about the visible object retrieved from a data store and displayed on the apparatus display as feedback to the user in response to generating an operation signal.

As noted above, neither Nukui nor Wang '264 teach or disclose capturing an image region on a substrate including an object visible to a user and coded embedded data indicating identification information about the visible object; the coded embedded data forming a uniform background for the visible object. Nukui does not teach a display associated with the disclosed data symbol reader therein. Wang '264 teaches a display but does not teach the display of an output image produced using second information about the visible object retrieved from a data store and displayed as feedback to the user in response to generating an operation signal. As noted above, it is reasonable to conclude that the only images that appear to be displayed on the display of the handheld decoder system disclosed in Wang '264 are image versions of the dataform as manual adjustments are made to the position of the decoder relative to the dataform on the card on which it is printed.

For the reasons above related to claims 1 and 17 and to claims 4 – 7 and 20 – 23, and for the foregoing reasons, is believed that newly-added claims 33 – 36 are also patentably distinct over and are not obvious in view of the Nukui, Wang '787, Chandler and Wang '264 disclosures, and are also believed to be in condition for allowance.

Information Disclosure Statement

A copy of issued patent US 6,310,988 entitled "Methods and Apparatus for Camera Pen" is being provided in an Information Disclosure Statement mailed with this amendment. The processing fee for submitting an IDS after receipt of an Office Action after the filing of an RCE has been authorized in the accompanying transmittal papers.

Reconsideration Requested

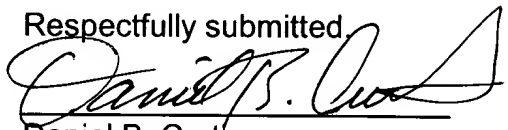
The undersigned respectfully submits that, in view of the foregoing amendments and remarks, the rejections of the claims raised in the Office Action dated March 18, 2003 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that these claims be allowed, and that this case be passed to issue.

Fee Authorization and Extension of Time Statement

A fee for an extension of time for one month has been authorized in the accompanying transmittal papers. No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any additional extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he is hereby authorized to call Applicant's attorney, Daniel Curtis, at Telephone Number (650) 812-4259, Palo Alto, California.

Respectfully submitted,



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Attachments

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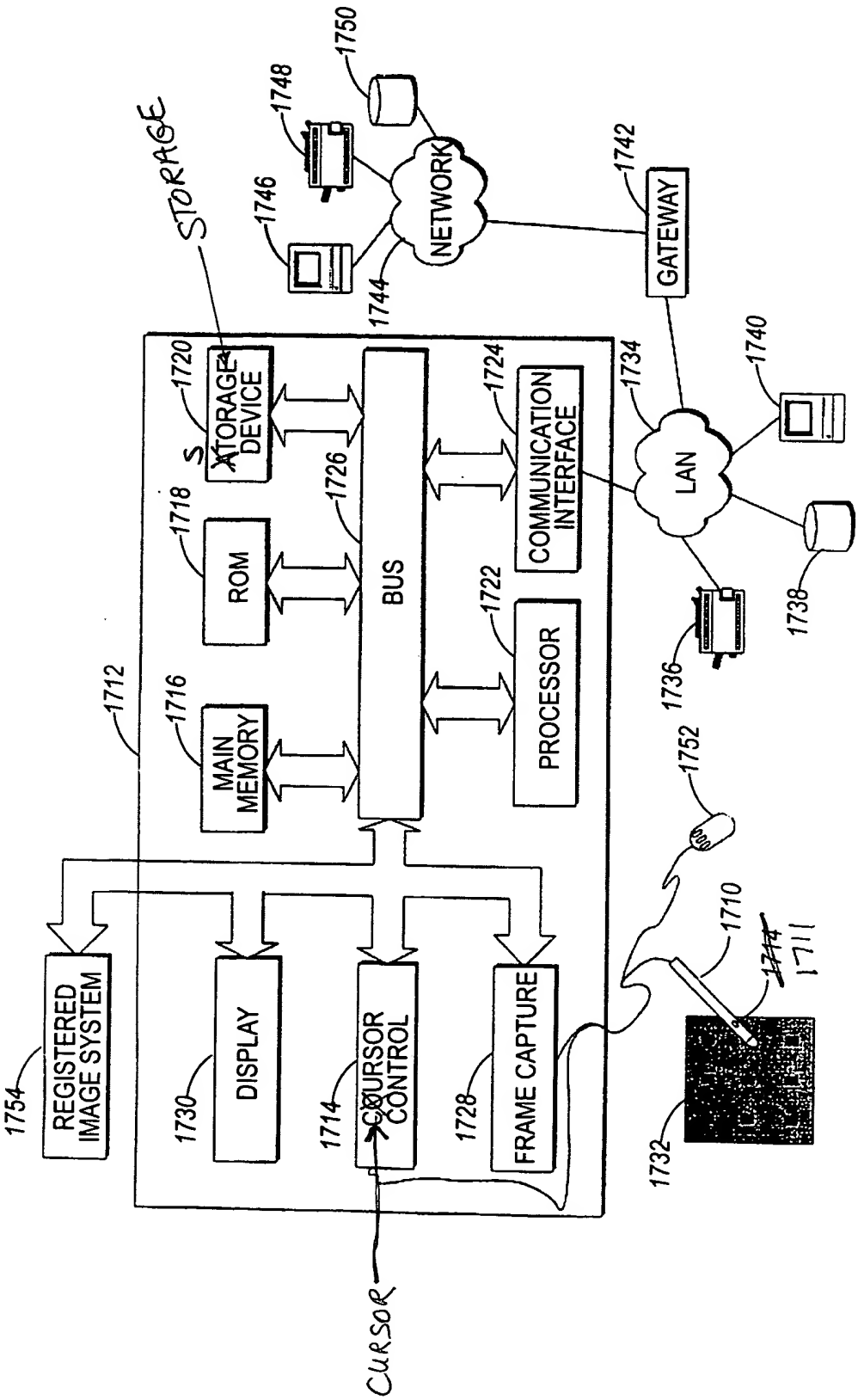

FIG. 9